

AMENDMENTS TO CLAIMS

Please amend the claims as indicated hereinafter.

1–85. (Canceled)

86. (New) A method for measuring client-side performance, the method comprising the steps of:

at an intercepting process executing on either an intercepting device or a server device:

intercepting an item that is in transit from a server process to a client device, prior to the arrival of the item at the client device;

wherein the server process is a process, other than the intercepting process, executing at the server device;

based on the item, generating a modified item by modifying the item to include code which causes one or more processors on the client device to perform the steps of:

measuring performance related to a service associated with the item; and performing one or more acts based on a measurement resulting from said step of measuring performance; and

sending the modified item to the client device.

87. (New) The method of Claim 86, wherein measuring performance related to a service associated with the item comprises measuring a number of events, the events including at least a plurality of cursor events, focus events, or change events.

88. (New) The method of Claim 86, wherein the one or more acts based on a measurement resulting from said step of measuring performance comprise:

determining that a measured performance is below a threshold of minimum performance;

in response to determining that the measured performance is below a threshold of minimum performance, sending a request to either the server device or intercepting device for a revised item;
receiving the revised item.

89. (New) The method of Claim 88, wherein the threshold of minimum performance is associated with a maximum acceptable response time.

90. (New) The method of Claim 88, wherein the one or more acts based on a measurement resulting from said step of measuring performance comprise:
recording data indicating the measurement in a cookie;
sending the cookie to at least one of the server device or the intercepting device.

91. (New) The method of Claim 90, wherein sending the cookie to at least one of the server device or the intercepting device occurs without a user at the client device requesting a new item.

92. (New) The method of Claim 90, wherein the one or more acts based on a measurement resulting from said step of measuring performance further comprise:
requesting an image file from one of the intercepting device or the server device;
wherein sending the cookie to at least one of the server device or the intercepting device occurs as a consequence of requesting the image file from one of the intercepting device or the server device.

93. (New) The method of Claim 92, wherein the image file is an image file with no data.

94. (New) The method of Claim 92, wherein the code causes performance of the act of requesting an image file from one of the intercepting device or the server device in response to detecting that the item is completely loaded in a client process at the client device.

95. (New) The method of Claim 86, wherein the one or more acts based on a measurement resulting from said step of measuring performance comprise reporting the measured performance to one of the server device or the intercepting device, the method further comprising:

correlating the measured performance at the client device with one or more metrics of server side performance.

96. (New) The method of Claim 86, further comprising
prior to intercepting the item in transit, at the intercepting process:

intercepting an initial item in transit from the server process to the client device,
prior to the arrival of the initial item at the client device;

based on the initial item, generating a modified initial item by modifying the
initial item to include initial code which causes one or more processors on
the client device to perform the step of:

recording a time at which the client device requests the item;

sending the modified initial item to the client device.

97. (New) The method of Claim 96, wherein recording the time at which the client device requests the item occurs in response to a user at the client device selecting a control that links to the item.

98. (New) The method of Claim 96, wherein the initial item is the item, wherein the initial code further causes the one or more processors on the client device to perform the steps of:

while loading the modified initial item:

determining that the client device does not store data indicating a request time for
the initial item, the request time being a time at which the initial item was
requested;

in response to determining that the client device does not store data indicating a
request time for the initial item, constructing a page to be loaded at the
client device in place of the modified initial item, said page being different

than the modified initial item, wherein the page includes code that causes the one or more processors on the client device to perform the steps of: automatically requesting the item from one of the server device or the intercepting device;
recording data indicating a time at which the item was requested.

99. (New) The method of Claim 96, wherein the initial item is the item, and wherein the method further comprises:

prior to intercepting the item in transit, at the intercepting process:

determining that the client device does not store data indicating a request time for the initial item, the request time being a time at which the initial item was requested;

wherein modifying the initial item comprises replacing at least some of the content of the initial item with place-holding content, wherein the modified initial code further causes the one or more processors on the client device to perform the steps of: automatically requesting the item from one of the server device or the intercepting device;
recording data indicating a time at which the item was requested.

100. (New) The method of Claim 96, further comprising:
at the intercepting process:

determining a percentage of total items sent to the client process that are to be modified; and

determining, based upon the percentage of total items sent to the client process that are to be modified, that one of the item or the initial item is to be modified;

wherein modifying the item occurs in response to determining, based upon the percentage of total items sent to the client process that are to be modified, that one of the item or the initial item is to be modified.

101. (New) The method of Claim 86, further comprising:
at the intercepting process:
determining a percentage of total items sent to the client process that are to be modified; and
determining, based upon the percentage of total items sent to the client process that are to be modified, that the item is to be modified;
wherein modifying the item occurs in response to determining, based upon the percentage of total items sent to the client process that are to be modified, that the item is to be modified.
102. (New) The method of Claim 86, wherein:
the item is an item in a frameset; and
the steps of measuring performance related to a service associated with the item and performing one or more acts based on a measurement resulting from said step of measuring performance occur in response to determining that all other items in the frameset have been loaded.
103. (New) The method of Claim 86, further comprising the steps of:
receiving, over a network, data indicating the measurement from the client device;
determining whether the data indicates performance has fallen below a threshold; and
if the data indicates performance has fallen below the threshold, then sending a notification message.
104. (New) The method of Claim 86, said step of performing one or more acts based on the measurement further comprising:
determining whether the measurement indicates performance has fallen below a threshold; and
if the measurement indicates performance has fallen below the threshold, then sending a notification message.

105. (New) The method of Claim 104, said step of sending a notification message comprising sending the notification message to an administrator for a server device associated with said service.

106. (New) The method of Claim 104, said step of sending a notification message comprising sending the notification message to a user of the client process.

107. (New) The method of Claim 86, wherein the measurement is a client response time between a first time when a user of the client device requested the item and a second time when the modified item is fully rendered on the display of the client device.

108. (New) The method of Claim 86, wherein:
the code further causes the one or more processors on the client device to perform the
step of collecting ancillary information relating to one or more components of the
client process that participate in obtaining the service from the application; and
said step of performing one or more acts based on the measurement includes correlating
the measurement with the ancillary information.

109. (New) The method of Claim 86, after said step of intercepting the item and before said step of modifying the item, further comprising the steps of:
determining a type associated with the item produced by the application; and
determining whether to perform said step of modifying the item based on the type of the
item.

110. (New) The method of Claim 86, after said step of intercepting the item and before said step of modifying the item, further comprising the steps of:
determining a unique reference associated with the item produced by the application; and
determining whether to perform said step of modifying the item based on whether the
unique reference matches a particular reference.

111. (New) The method of Claim 86, wherein:

the item to be sent to the client device is stored in a cache before the item is sent to the client device;
said step of intercepting the item comprises accessing the item in the cache; and
said step of sending the modified item to the client device comprises replacing the item in the cache with the modified item.

112. (New) The method of Claim 111, wherein the cache is on the server device.
113. (New) The method of Claim 111, wherein the cache is on a proxy server for the client process.
114. (New) The method of Claim 86, wherein the item includes hypertext markup language (HTML) statements.
115. (New) The method of Claim 86, wherein the code comprises javascript statements.
116. (New) The method of Claim 86, wherein the code comprises a Java applet.
117. (New) The method of Claim 86, wherein the code comprises an ActiveX module.
118. (New) The method of Claim 86, wherein the client device comprises a web browser at which the item is received and at which the code is executed.
119. (New) The method of Claim 86, further comprising the steps of:
receiving, over a network, data indicating the measurement from the client device;
determining whether the data indicates a performance problem, the performance problem being that performance has fallen below a threshold; and
if the data indicates performance has fallen below the threshold, then, based at least on the data and one or more metrics of server-side performance, determining whether the performance problem is attributable to the server device, or one of the client device and a network connected the client device to the server device.

120. (New) A method for measuring client-side performance, the method comprising the steps of:

receiving, at a server device, from a client device, data indicating that the client device has experienced poor performance with respect to an item requested by the client device;

in response to receiving the data:

generating a revised item based on the item.

121. (New) The method of Claim 120, wherein the data indicating poor performance in relation to an item requested by the client device indicates a measurement of performance taken at the client device, the method further comprising:

determining that the measurement of performance is below a minimum threshold.

122. (New) The method of Claim 121, wherein the measurement of performance is a client response time between a first time when a user of the client device requested the item and a second time when the modified item is fully rendered on the display of the client device.

123. (New) The method of Claim 121, wherein the measurement of performance is a number of cursor events that have occurred since the item was fully rendered on the display of the client device.

124. (New) The method of Claim 120, wherein the data indicating poor performance in relation to the item requested by the client device is data indicating that the client device considers a measurement of performance taken at the client device to be below a minimum threshold.

125. (New) The method of Claim 120, wherein the revised item is a smaller version of the item.

126. (New) The method of Claim 120, wherein the revised item is a simpler version of the item.

127. (New) The method of Claim 120, further comprising communicating the revised item to the client device.

128. (New) The method of Claim 120, wherein generating a revised item based on the item and communicating the revised item to the client device occur further in response to:

determining that a certain percentage of client devices in a set of client devices, the set of client devices including the client device, also have experienced poor performance with respect to the item.

wherein certain percentage exceeds some minimal threshold.

129. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 86.

130. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 87.

131. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 88.

132. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 89.

133. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 90.

134. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 91.

135. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 92.

136. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 93.

137. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 94.

138. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 95.

139. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 96.

140. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 97.

141. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 98.

142. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 99.

143. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 100.

144. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 101.

145. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 102.

146. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 103.

147. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 104.

148. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 105.

149. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 106.

150. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 107.

151. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 108.

152. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 109.

153. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 110.

154. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 111.

155. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 112.

156. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 113.

157. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 114.

158. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 115.

159. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 116.

160. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 117.

161. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 118.

162. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 119.

163. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 120.

164. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 121.

165. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 122.

166. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 123.

167. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 124.

168. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 125.

169. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 126.

170. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 127.

171. (New) A computer-readable storage medium storing one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 128.